



## **ATMIS:** Air Traffic Management Integrated System

Faculty Advisors:

Sanne Martens  
Professor,  
Department of  
Interactive Media

Kim Grinfeder  
Associate Professor,  
Department of  
Interactive Media

# The Team



**Joanna Minott**

Interactive Media,  
M.F.A. Candidate  
UI/UX Designer



**Sofia Perez-Baux**

Interactive Media,  
B.S. Candidate  
UI/UX Designer



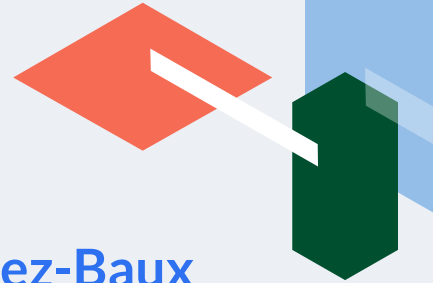
**Noel Nuñez**

Interactive Media,  
M.F.A. Candidate  
Interaction Designer



**Caragan Olles**

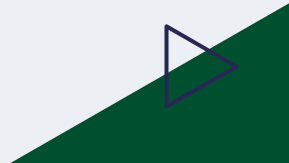
Creative Advertising, B.S.  
Copywriter





# The Status Quo

**Inefficient design systems disrupt seamless air traffic management workflows.**

- Current system requires **multiple clicks** and maneuvers to complete tasks
  - Transition challenges from over **57 separate** legacy applications
  - Lack of **customization options** and user preferences
  - **Inconsistency** in graphical user interface (GUI) across applications
  - Heavy **cognitive load** due to learning different behaviors and interactions
- 



# What We Heard

## QUOTES

“The less clicks the better. Right?  
It's a lot to switch over to constantly.”



## TRANSLATION

Managers transition between multiple applications in order to complete a specific task.





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“I would have to physically print out multiple TMI models on paper in order to talk with my colleagues to find the best model.”



TM'S would make multiple entries in one application.





# The Insight

What we didn't  
know:

The workflow is a  
**cyclical process**

**Collaborative** but not  
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**Disconnect** in  
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## Why is it important?

This could impact the **overall efficiency** and **safety of flight redirection** processes and require additional efforts to mitigate information overload



**Meet our Users...**



# Meet Edward

## Users

**A seasoned traffic manager who has developed a routine of how to complete his workflow for over a decade.**

- He has a set of tasks that he follows everyday, never derailing from routine.
- While viewing the current flight demand, he becomes frustrated with having to click open multiple windows to change and use an application.
- His frustrations reduce his productivity, making it difficult to focus on his main task and monitor input from other control centers.



**Edward  
Jones**

# Meet Robin

Users



Robin  
Sanchez

**A young and tech savvy new hire that has not developed preferences in order of operations and ways to work with current tools in place.**

“I want to familiarize myself with the layout and functions of the various software and tools provided to me when I log into my computer at the start of my shift.”

“These systems lack a user-friendly interface which can be overwhelming and confusing.”

# The Opportunity

## What If There Was A Way To:

- Streamline the air traffic management process
- Enhance communication and collaboration between stakeholders
- Provide comprehensive and up-to-date information about weather conditions, airspace congestion, and potential conflicts
- Send notifications and alerts for critical flight information

**All In One Place?**



**We're revolutionizing air traffic management as Adobe and Microsoft revolutionized communication and integrated user experiences.**



# Introducing ATMIS

## Air Traffic Management Integrated System

A modernized interface for traffic managers, offering a flexible and customizable layout focusing on the task at hand. Delivering the most relevant information at the right time to maximize productivity and minimize user error.



# Executive Summary

- Modernized interface for traffic managers at the Command Center
- Flexible and customizable layout for efficient workflow
- Minimized clicks and maneuvers, spotlight relevant information
- Streamlined application to consolidate and simplify workflow
- Consistent look and feel for ease of use



# ATMIS Core Layout Properties

Notifications



App Launcher



The screenshot displays the ATMIS Core Layout interface. At the top, a notification banner for a "PERTI Plan Update" is visible, with details: "Issued: May 23 at 4:53 PM EDT", "Expiring: June 7, 23 at 11:59 PM EDT", "Affected Areas: Gulf, Atlanta", and "Status Active". The banner includes "Create Event" and "Dismiss" buttons. The date and time "WEDNESDAY JUNE 7, 2023 11:45 AM EST | 17:45 Zulu" are shown on the right. The left sidebar, labeled "App Launcher", contains a menu with items: Dashboard, ATMIS, Apps, Alerts, PERTI Plan (selected), Cases, Comms, Calendar, Log, and Review. The main content area shows a "PERTI Plan Update: 05.23.23 4:53 PM EDT U.S." notification. The notification title is "SOUTHEASTERN U.S. LARGE SCALE SEVERE WEATHER EVENT" for "Jacksonville, FL". It includes a "Predicted forecast based on weather models" section with a graph showing "Weather factors progression" over time (6:00 AM to 11:00 AM) for four factors: Atmospheric Pressure (blue), Rainfall (yellow), Wind Speed (green), and Visibility (red). Below the graph are tabs for "6 Hours", "12 Hours", "24 Hours", and "48 Hours". A text block states: "This is a large-scale weather event impacting the southeastern US, where multiple traffic management initiatives need to be planned and negotiated." Below this, "Next suggested steps:" are listed: "Based on previous similar events, our system suggests documenting the following TMI that could address the potential demand/capacity imbalances created by the weather constraint: GDPs for Florida airports, an AFP, and Playbook Routes." At the bottom of the notification are "Track" and "Dismiss" buttons. The background shows a map of the southeastern US with cities like Charleston, Savannah, Jacksonville, and Orlando labeled. A vertical sidebar on the right contains various tool icons: TMI, FCA/FEA, Altitude, Aircraft, Airports, Time, HPR, Model, and Notes.

# ATMIS Core Layout Properties

The screenshot displays the ATMIS Core Layout interface. At the top right, the date and time are shown: WEDNESDAY JUNE 7, 2023, 11:45 AM EST | 17:45 Zulu. The interface is divided into several panels:

- Left Sidebar:** Contains navigation icons for Dashboard, ATMIS, Apps, Alerts, PERTI Plan, Cases, Comms, Calendar, Log, and Review.
- HPR Panel (top left):** Features a "Program Type" dropdown set to "AFP-DAS", "Start Time" and "End Time" pickers, "Purge Flights" options (Before Revision Starts, Compress to Last CTA), and "Fill" and "With" input fields. It includes "Cancel" and "edit" buttons.
- GDT Model Panel (bottom left):** Shows a "GDT ATL Model" with a bar chart for 15 min, 30 min, and 60 min intervals. The chart displays demand (Y-axis) over time (X-axis). It includes "X = Time" and "Y = Demand" labels and a "Save" button.
- Central Map:** Titled "ATMIS | Viewing: Southeastern U.S.", it shows a map of the Southeastern United States with a precipitation radar overlay. A legend on the left indicates precipitation intensity from Light to Extreme. The map includes city names like Macon, Dothan, Tallahassee, Jacksonville, Gainesville, Orlando, Lakeland, and Tampa.
- TMI Panel (right):** Displays "TMI Program" details, including "CTL Element: FCAJX7", "ALTITUDES INCLUDED: FL200 to FL500", "CUMULATIVE PERIOD: 29/1400Z - 30/0259Z", "PROGRAM RATE: 80/80/80/80/100/100", "FLT INCL: All Flights in FCAJX7 Dynamic Flight List", "DEP SCOPE: (All) ZLA ZAU ZLC ZTL ZDC ZNY ZHU ZJX ZFW ZOB ZDV ZOA ZSE ZBW ZMA ZKC ZME ZID ZAB ZMP", "Maximum Delay: 495", and "Average Delay: 95". It also shows "Type" options (GDP, AFP), "comments", "Share to:" options (webinar, message), and a "Meeting in Progress: PERTI Plan Review" notification with a "change" link. A "Share" button is at the bottom.
- Right Toolbar:** A vertical toolbar with icons for TMI, FCA/FEA, Altitude, Aircraft, Airports, Time, HPR, Model, and Notes.

Toolbar

Responsive Canvas

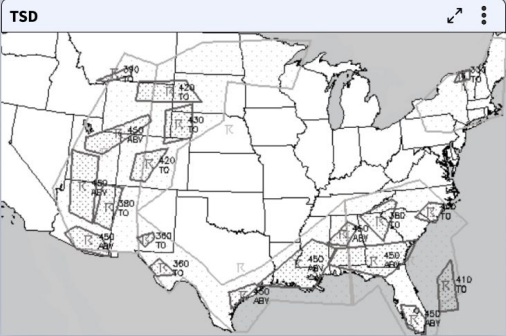
# ATMIS Core Layout Properties

WEDNESDAY JUNE 7, 2023  
11:45 AM EST | 17:45 Zulu

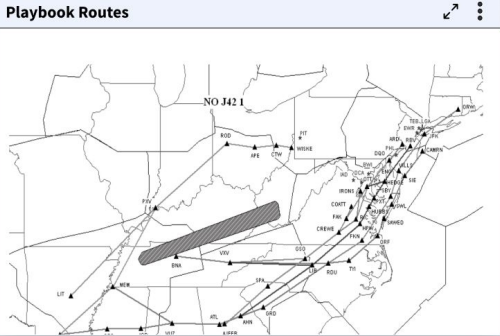
RS

Dashboard  
ATMIS  
Apps  
Alerts  
PERTI Plan  
Cases  
Comms  
Calendar  
Log  
Review

**TSD**



**Playbook Routes**



**FSM**

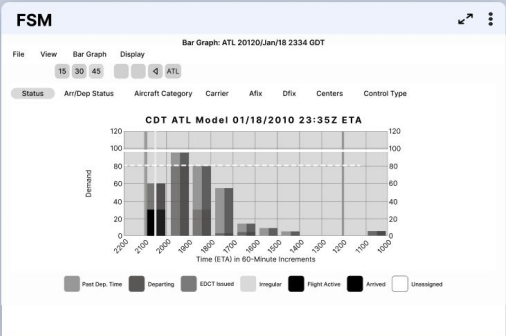
Bar Graph: ATL 20120/Jan/18 2334 GOT

File View Bar Graph Display

15 30 45 ATL


Status Arr/Dep Status Aircraft Category Carrier Affix Dfx Centers Control Type

CDT ATL Model 01/18/2010 23:35Z ETA



**ATMIS | Viewing: Southeastern U.S.**

Radar Aircraft SAA Events



Focus Area  
With Live  
Apps

# ATMIS Core Layout Properties

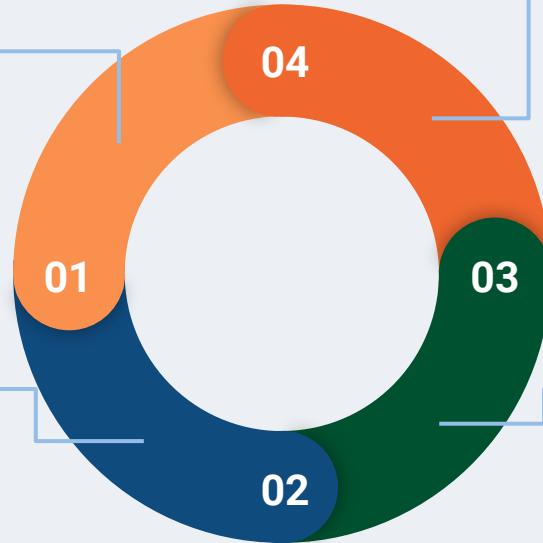
The screenshot displays the ATMIS interface. At the top right, it shows the date and time: "WEDNESDAY JUNE 7, 2023 11:45 AM EST | 17:45 Zulu" and a user profile icon labeled "RS". The main header reads "ATMIS | Viewing: Southeastern U.S.". Below this is a map of the Southeastern United States, including parts of Alabama, Georgia, South Carolina, and Florida. The map is populated with numerous aircraft icons in green, yellow, and purple. A sidebar on the left contains a navigation menu with items: Dashboard, ATMIS (highlighted), Apps, Alerts, PERTI Plan, Cases, Comms, Calendar, Log, and Review. At the top of the map area, there are tabs for "Radar", "Aircraft" (which is selected and highlighted with a blue border), and "SAA Events". On the right side of the map, there is a vertical toolbar with icons for TMI, FCA/FEA, Altitude, Aircraft, ARTCC, Time, HPR, Model, and Notes. A red arrow points from the text "Expanded & Focused View" to the map area.

Expanded & Focused View

# The Advantages

**Data Integration**  
ATMIS consolidates information from multiple systems, reducing manual data entry and improving accuracy.

**Optimized Workflow**  
The streamlined app design enables faster and more efficient communication.



## Real Time Updates

ATMIS provides real-time updates, allowing command centers to receive and disseminate crucial information rapidly.

## User-friendly Interface

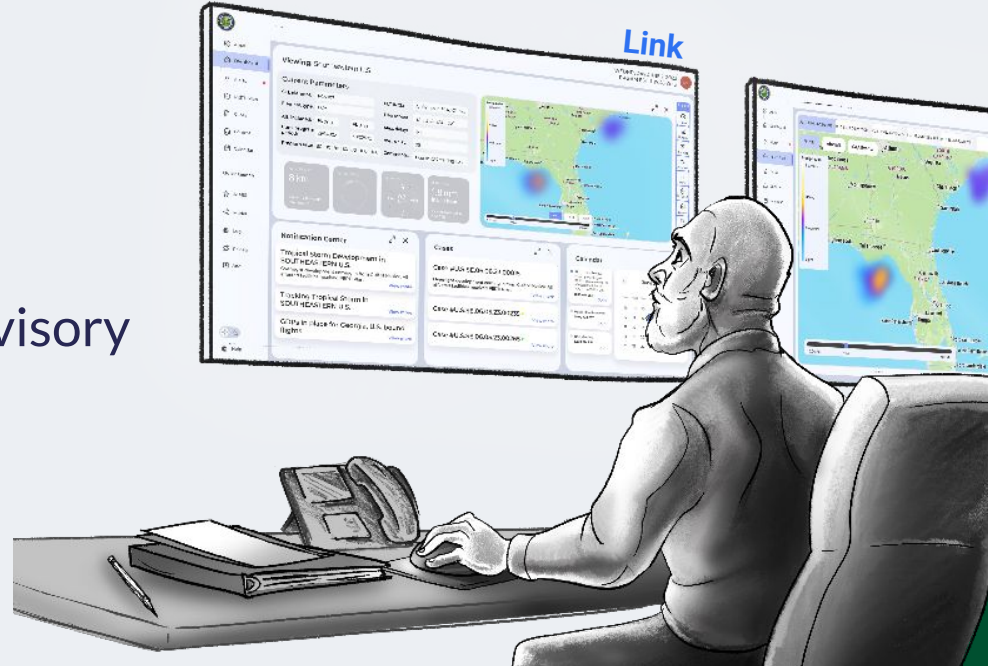
The streamlined design makes it intuitive for command center personnel to navigate and communicate effectively.



# ATMIS Prototype Tasks

## Traffic Flow Management for a Large-Scale Weather Event with FMDS

- Create FCA
- View Flight Demand
- Model an AFP
- Share FCA and modeled AFP
- Implement AFP by issuing an Advisory
- Monitor Effectiveness of AFP
- Modify the AFP parameters
- Log TFM actions



# Summary

ATMIS is the standard to improve the workflow for all air traffic control managers.

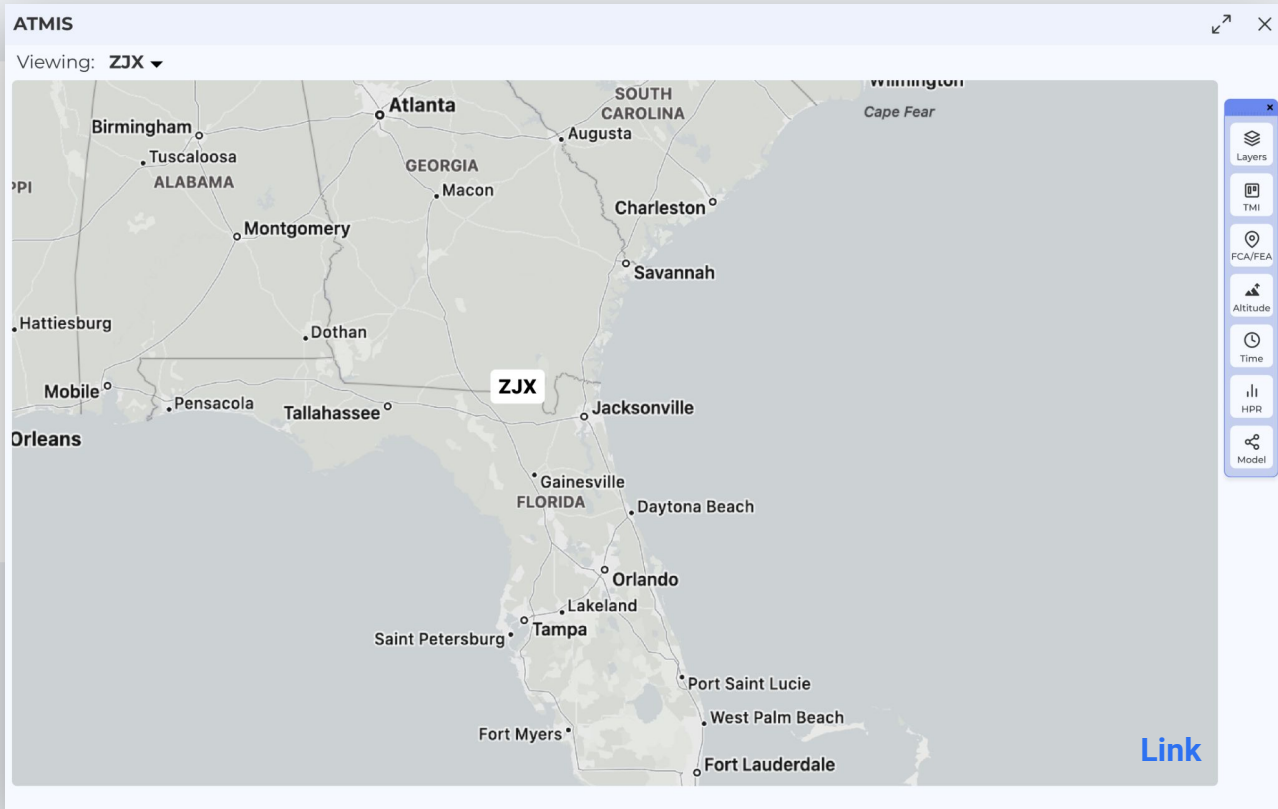
**With ATMIS, air traffic control managers can...**

1. Focus effectively on tasks with minimized clicks
2. Customize the layout and set preferences specific to them
3. Experience optimized multitasking on a focused workspace
4. Communicate with enhanced features and tools



# Next Steps

## Design Improvements for Better Integration





# Next Steps

## User Testing

The screenshot displays the Figma design tool interface during a user testing session. The interface includes a recording indicator, a toolbar, and a 'Layers' panel on the left. The main workspace shows a 'Dashboard (customizable)' wireframe with several blue circular annotations containing the letter 'J'. A vertical video chat window on the right side of the screen shows five participants: Sanne Martens, Rob Raske, sofia perez-baux, Caragan Olles, and Joanna Minott. The browser address bar shows 'figma.com' and the page title is 'Team project / UX Design'.

# Next Steps

## Virtual & Augmented Reality Opportunities



- Dynamic interactions with data
- Spatial relationships can be more accurately measured and interpreted
- Collaborative training opportunities
- Engaging and realistic communication

A stylized illustration of an airport scene. In the top left corner, there is a bright yellow sun with a white outline. The background is a light blue sky. In the foreground, there is a dark blue ground. On the left, a large white airplane tail with a prominent orange stripe is visible. In the center, a smaller white airplane is parked on the tarmac, with a blue jet bridge extending from it. To the right, the nose and cockpit of a large white airplane are visible. The overall style is flat and modern.

# Thank You!